

PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Jonathan R. Cohen, et al.

Serial No.: 09/823,628

Filed: March 30, 2001

For: **COMPUTERIZED INTERACTOR
SYSTEMS AND METHODS FOR
PROVIDING SAME**

Examiner: Not Yet assigned.

Group Art Unit: 2675

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05/21/2001 ANABYL 00000001 00000000

01 FC:103 333.00 GP
02 FC:102 87.00 GP

07/11/2001 TVD111 00000005 023964 09823628

01 FC:103 18.00 CH

CERTIFICATE OF MAILING

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Signed:

Sheena Hicks
Sheena Hicks

PRELIMINARY AMENDMENT AND RESPONSE TO NOTICE TO FILE
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BOX FEE AMENDMENT
Commissioner of Patents
Washington, DC 20231

Dear Sir:

Prior to substantive examination of the above-identified patent application, please enter the following.

IN THE ABSTRACT

Please add the following abstract. (A clean copy can be found appended.):

The present invention teaches a variety of methods and systems for providing computer/human interfaces. According to one method, the user interfaces with an electronic device such as a computer system by engaging a sensor with desired regions of an encoded physical medium. the encoded physical medium is preferably chosen to provide intuitive meaning to the user and is thus an improved metaphor for interfacing with the computer system. The sensor may have at least one identification number (ID) providing information such as user identity, sensor type, access type, or language type.

R Attny Docket No.: 60231-300104

The sensor can transmit the certain decoded information together with the at least one ID to the computer system.

IN THE CLAIMS

Please amend the claims as follows (Please find the marked up version attached):

24. (Once amended) A system for controlling a computerized audio conferencing system comprising:

at least one physical control member having an identity; and

a network of workstations, comprised of a plurality of workstations, each having a plurality of fields receptive to said physical control member, an interface coupled to said field and operative to develop an identity signal representative of said identity of said physical control member and a processor coupled to said interface and receptive to said identity signal, said processor processing said identity signal to develop a control signal for a computer system to be controlled;

wherein said audio conferencing system comprises a microphone and a speaker for audio communication between said network of workstations for each of said network of workstations, said audio application system being responsive to said control signal from said computer system to provide at least one audio sound having a volume and a directional characteristics which is based on said physical control members being selectively operated for reception by said field.

31. (Once amended) A system for controlling a computerized system as recited in claim 24, further comprising a plurality of control members for reception by said fields and wherein each of said fields comprises a plurality of positions at which a respective of said plurality of physical control members may be selectively manually placed and removed thereby to provide a plurality of selectable and changeable arrangements of said plurality of control members at said plurality of positions of each of said fields.

33. (Once amended) A system for controlling a computerized system as recited in claim 24 wherein said control member comprises identification circuitry and wherein each of said fields comprises internal circuitry adapted for connection with said identification circuitry of said control member, said internal circuitry of each of said fields being coupled to a corresponding interface.

34. (Once amended) A system for controlling a computerized system as recited in claim 33 wherein each of said fields comprises a plurality of positions at which said physical control member may be selectively manually removably positioned in order to at least temporarily connect said identification circuitry of said control member with said internal circuitry of a particular field of said plurality of fields.

35. (Once amended) A system for controlling a computerized system as recited in claim 34 wherein said particular field comprises at least one channel having a slanted surface for supporting said control physical control member and wherein said computer system comprises a plurality of magnet elements for biasing said physical control member into a selected position.

49. (New) A system for controlling a computerized audio application system as recited in claim 24, wherein said network of workstations further includes a data server computer executing data server software and network library software, and wherein each of said workstation is executing application software implementing the local audio application system and network library software.

50. (New) A system for controlling a computerized audio conferencing system as recited in claim 24, wherein one of said fields includes a detection board representing a virtual audio space and said at least one physical control member is a first control member representing a first user of said computerized audio conferencing system.

51. (New) A system for controlling a computerized audio conferencing system as recited in claim 50, further including a second control member representing a second

user of said computerized audio conferencing system, wherein when said first and second control members are positioned upon a particular detection board of a first workstation operated by said first user, said first user is provided audio feedback such that noise generated by said second user appears to be spatially located as indicated by the positions of said first and second control members upon said detection board.

52. (New) A system for controlling a computerized audio conferencing system as recited in claim 50, wherein said first control member is one of said plurality of physical control members representing a plurality of users, wherein when a subset of said plurality of control members including said first control member is positioned upon a first detection board corresponding to a first workstation operated by said first user, said first user is provided audio feedback such that noise generated by users corresponding to said subset of said plurality of control members appears to be spatially located as indicated by the positions of said plurality of control members that have been positioned upon said detection board.

53. (New) A system for controlling a computerized audio conferencing system as recited in claim 24, wherein one of said fields includes a detection board representing a portion of a virtual audio space, and for a first workstation, a first user of said first workstation is deemed positioned at a fixed point within the virtual audio space such that when a second control member representing a second user of a second workstation is positioned upon said detection board, said first user is provided audio feedback such that noise generated by said second user appears to be spatially located as indicated by the relation between the position of said second control member and said fixed point.

54. (New) A system for controlling a computerized audio conferencing system as recited in claim 53, wherein said fixed point is located upon said detection board.

55. (New) A system for controlling a computerized audio conferencing system as recited in claim 53, wherein said fixed point is located off of said detection board.

56. (New) A method for controlling a computerized audio conferencing system comprising the steps of:

- a) providing a plurality of fields, each said field being associated with a specific one of a plurality of networked computer workstations;
- b) placing a physical control member into one of said plurality of fields;
- c) developing an identity signal in response to said placement of said physical control member into said one of said plurality of fields, said identity signal representative of an identity of said physical control member;
- d) developing a control signal for each said control members response to said placement of said physical control member into said one of said plurality of fields, said control signal representative of the location of said physical control member in said field;
- e) providing a plurality of interfaces, each said interface being associated with specific one of said plurality of networked computer workstations, and each said interface being coupled to said computer workstations and said field;
- f) communicating the location of said control member within said field to said computer workstation using said control signal;
- g) providing an audio conferencing system interconnected to each of said workstations comprising a microphone and a speaker for audio communication between said workstations, said audio conferencing system being responsive to said control signal from said computer system; and
- h) providing audio sounds having volume and directional characteristics which are a function of said control members selectively operated for reception by said field and correspond to the location of said control member within said field.

57. (New) A method for controlling a computerized system as recited in claim 56, wherein said status of said member is a function of a position of said member received by said field and of a time said member is received by said field.

58. (New) A method for controlling a computerized system as recited in claim 56, further comprising a plurality of control members for reception by said fields and wherein each field comprises a plurality of positions at which respective ones of said plurality of control members may be selectively manually placed and removed thereby to provide a plurality of selectable and changeable arrangements of said plurality of control members at said plurality of positions of each field.

59. (New) A method for controlling a computerized system as recited in claim 56, wherein said control member comprises identification circuitry and wherein each field comprises internal circuitry adapted for connection with said identification circuitry of said control member, said internal circuitry of each field being coupled to said corresponding interface.

60. (New) A method for controlling a computerized system as recited in claim 59, wherein each field comprises a plurality of positions at which said control member may be selectively manually removably positioned in order to at least temporarily connect said identification circuitry of said control member with said internal circuitry of a particular field.

61. (New) A method for controlling a computerized system as recited in claim 60, wherein a particular field comprises at least one channel having a slanted surface for supporting said control member and wherein the system comprises magnet elements for biasing said control member into a selected position.

62. (New) A method for controlling a computerized audio application system as recited in claim 56, wherein said network further includes a data server computer executing data server software and network library software, and wherein each workstation is executing application software implementing the local audio application system and network library software.

63. (New) A method for controlling a computerized audio conferencing system as recited in claim 56, wherein one of said fields includes a detection board representing a virtual audio space and said at least one physical control member is a first control member representing a first user of said computerized audio conferencing system.

64. (New) A method for controlling a computerized audio conferencing system as recited in claim 63, further including a second control member representing a second user of said computerized audio conferencing system, wherein when said first and second control members are positioned upon a particular detection board of a first workstation operated by said first user, said first user is provided audio feedback such that noise generated by said second user appears to be spatially located as indicated by the positions of said first and second control members upon said detection board.

65. (New) A method for controlling a computerized audio conferencing system as recited in claim 63, wherein said first control member is one of a plurality of control members representing a plurality of users, wherein when a subset of said plurality of control members including said first control member is positioned upon a first detection board corresponding to a first workstation operated by said first user, said first user is provided audio feedback such that noise generated by users corresponding to said subset of said plurality of control members appears to be spatially located as indicated by the positions of said plurality of control members that have been positioned upon said detection board.

66. (New) A method for controlling a computerized audio conferencing system as recited in claim 56, wherein one of said fields includes a detection board representing a portion of a virtual audio space, and for a first workstation, a first user of said first workstation is deemed positioned at a fixed point within the virtual audio space such that when a second control member representing a second user of a second workstation is positioned upon said detection board, said first user is provided audio feedback such that noise generated by said second user appears to be spatially located as indicated by the relation between the position of said second control member and said fixed point.

67. (New) A method for controlling a computerized audio conferencing system as recited in claim 66, wherein said fixed point is located upon said detection board.

68. (New) A method for controlling a computerized audio conferencing system as recited in claim 66, wherein said fixed point is located off of said detection board.

69. (New) A system for controlling a computerized audio conferencing system comprising:

at least one physical control member having an identifiable identity;

at least one two dimensional detection board representing a virtual audio space and receptive to said control member wherein said detection board comprises a plurality of positions at which respective ones of said control member may be selectively manually placed and removed thereby to provide a plurality of selectable and changeable arrangements of said control member at said plurality of positions of said detection board;

a network of workstations each having an interface coupled to said detection board and operative to develop an identity signal representative of said identity of said control member wherein each of said workstations has an audio application system including a microphone and a speaker for audio communication between said workstations, said audio application system being responsive to said control signal from said audio conferencing system to provide audio sounds having volume and directional characteristics which are a function of control members selectively operated for reception by said detection space; and

a processor coupled to said interface and receptive to said identity signal, said processor processing said identity signal to develop a control signal for a system to be controlled.

70. (New) A system for controlling a computerized audio conferencing system as recited in claim 69, wherein the status of said member is a function of the position of said member received by said detection board and of a time said member is received by said detection board.

71. (New) A system for controlling a computerized audio system as recited in claim 69, wherein said control member comprises identification circuitry and wherein said detection board comprises internal circuitry adapted for connection with said identification circuitry of said control member, said internal circuitry of said detection board being coupled to a corresponding interface.

72. (New) A system for controlling a computerized system as recited in claim 71, wherein said detection board comprises a plurality of positions at which said control member may be selectively manually removably positioned in order to at least temporarily connect said identification circuitry of said control member with said internal circuitry of said detection board.

73. (New) A system for controlling a computerized audio application system as recited in claim 69, wherein said network further includes a data server computer executing data server software and network library software, and wherein each workstation is executing application software implementing the local audio application system and network library software.

74. (New) A system for controlling a computerized audio conferencing system as recited in claim 69, wherein one of said at least one physical control member is a first control member representing a first user of said computerized audio conferencing system.

75. (New) A system for controlling a computerized audio conferencing system as recited in claim 74, further including a second control member representing a second user of said computerized audio conferencing system, wherein when said first and second control members are positioned upon a particular detection board of a first workstation operated by said first user, said first user is provided audio feedback such that noise generated by said second user appears to be spatially located as indicated by the positions of said first and second control members upon said detection board.

76. (New) A system for controlling a computerized audio conferencing system as recited in claim 74, wherein said first control member is one of a plurality of control members representing a plurality of users, wherein when a subset of said plurality of control members including said first control member is positioned upon a first detection board corresponding to a first workstation operated by said first user, said first user is provided audio feedback such that noise generated by users corresponding to said subset of said plurality of control members appears to be spatially located as indicated by the positions of said plurality of control members that have been positioned upon said detection board.

77. (New) A system for controlling a computerized audio conferencing system as recited in claim 69, wherein a first user of a first workstation is deemed positioned at a fixed point within said virtual audio space such that when a second control member representing a second user of a second workstation is positioned upon said detection board, said first user is provided audio feedback such that noise generated by said second user appears to be spatially located as indicated by the relation between the position of said second control member and said fixed point.

78. (New) A system for controlling a computerized audio conferencing system as recited in claim 77, wherein said fixed point is located upon said detection board.

79. (New) A system for controlling a computerized audio conferencing system as recited in claim 77, wherein said fixed point is located off of said detection board.

80. (New) A method for controlling a computerized audio conferencing system comprising the steps of:

- a) providing at least one two dimensional detection board representing a virtual audio space, said detection board including plurality of positions;
- b) providing a plurality of physical control members;

c) placing one of said physical control members into said detection board at one of said plurality of positions;

d) developing an identifiable identity signal corresponding to each said plurality of control members;

e) developing a control signal corresponding to said selected position of each said control members within said detection board;

e) providing a network of workstations each including one of said detection boards, an interface, a microphone and a speaker for audio communication between said workstations, said interface being coupled to said detection board and operative to communicate said identity signal and said control signal to said corresponding workstation; and

f) transmitting audio sounds on said network of workstation having volume and directional characteristics corresponding to said selected position of said control members within said detection board.

81. (New) A method for controlling a computerized audio conferencing system as recited in claim 80, wherein the status of said plurality of control members is a function of said position of said control members received by said detection board and of a time said plurality of control members are received by said detection board.

82. (New) A method for controlling a computerized audio system as recited in claim 80, wherein each said plurality of control members comprises identification circuitry and wherein said detection board comprises internal circuitry adapted for connection with said identification circuitry of each said plurality of control members, said internal circuitry of said detection board being coupled to a corresponding interface.

83. (New) A method for controlling a computerized system as recited in claim 82, wherein said detection board comprises a plurality of positions at which each said control members may be selectively manually removably positioned in order to at least temporarily connect said identification circuitry of each said plurality of control members with said internal circuitry of said detection board.

84. (New) A method for controlling a computerized audio application system as recited in claim 80, wherein said network further includes a data server computer executing data server software and network library software, and wherein each workstation is executing application software implementing the local audio application system and network library software.

85. (New) A method for controlling a computerized audio conferencing system as recited in claim 80, wherein one of said plurality of control members is a first control member representing a first user of said computerized audio conferencing system.

86. (New) A method for controlling a computerized audio conferencing system as recited in claim 85, further including the step of providing a second control member representing a second user of said computerized audio conferencing system, wherein when said first and second control members are positioned upon a particular detection board of a first workstation operated by said first user, said first user is provided audio feedback such that noise generated by said second user appears to be spatially located as indicated by the positions of said first and second control members upon said detection board.

87. (New) A method for controlling a computerized audio conferencing system as recited in claim 85, wherein said first control member is one of a plurality of control members representing a plurality of users, wherein when a subset of said plurality of control members including said first control member is positioned upon a first detection board corresponding to a first workstation operated by said first user, said first user is provided audio feedback such that noise generated by users corresponding to said subset of said plurality of control members appears to be spatially located as indicated by the positions of said plurality of control members that have been positioned upon said detection board.

88. (New) A method for controlling a computerized audio conferencing system as recited in claim 80, wherein a first user of a first workstation is deemed positioned at a fixed point within said virtual audio space such that when a second control

member representing a second user of a second workstation is positioned upon said detection board, said first user is provided audio feedback such that noise generated by said second user appears to be spatially located as indicated by the relation between the position of said second control member and said fixed point.

89. (New) A method for controlling a computerized audio conferencing system as recited in claim 88, wherein said fixed point is located upon said detection board.

90. (New) A method for controlling a computerized audio conferencing system as recited in claim 88, wherein said fixed point is located off of said detection board.

FOR FILED IN 60231-300104

Remarks

This application is a divisional of prior Application No.: 08/801,085, filed July 29, 1996. This preliminary amendment is written in response to the Election/Restriction requirement of October 26, 1999. This application is drawn to an audio conferencing system, Invention II as identified in the Election/Restriction requirement. All claims drawn to a computerized interactor system, Invention I have been canceled for this application.

Claims 24, 26, 31 and 33-35 have been amended. Claims 1-23, 25, 27-30 and 37-48 have been canceled. New claims 49-90 have been added. No new matter has been added by the amendments or the new claims. Therefore claims 24, 26, and 31-36 are pending.

Claim 24, as amended, is a system for controlling a computerized audio application system using control members. The system of claim 24 requires a network of workstations each having a field receptive to said control member, an interface coupled to said field and operative to develop an identity signal representative of said identity of said control member, and a processor coupled to said interface and receptive to said identity signal, said processor processing said identity signal to develop a control signal for a system to be controlled. These limitations were brought in from dependent claim 28 as filed, which as a result has been canceled.


New claims 56-68 are directed toward a method for controlling a computerized audio conferencing system. Support for the inventions of claim 56-68 can be found, for example, in Figure 10 and the description on page 16, lines 11-35.

New claims 69-90 are directed toward a system and method for controlling a computerized audio conferencing system requiring a two dimensional detection board. Support for the inventions can be found, for example, in Figure 11a, lines 1-24.

Applicant believes that all pending claims are allowable. Therefore Applicant respectfully requests that a Notice of Allowance be issued at an early date. Applicant believes that all fees have been included in attached check, but should the examiner find the amount insufficient, the examiner is authorized to charge additional amounts to deposit account #02-3964, client number 60231-300104. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Dated: 15 May 2001

Respectfully submitted,
OPPENHEIMER WOLFF & DONNELLY, LLP



Brian R. Coleman
Reg. No. 39,145

1400 Page Mill Road
Palo Alto, California 94304
Telephone: (650) 320-4000

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Please find the marked up version of the claims as follows:

24. (Once amended) A system for controlling a computerized audio conferencing system comprising:

at least one physical control member having an [identifiable] identity; and

a network of workstations, comprised of a plurality of workstations, each having a plurality of fields receptive to said physical control member[;], an interface coupled to said field and operative to develop an identity signal representative of said identity of said physical control member[;] and a processor coupled to said interface and receptive to said identity signal, said processor processing said identity signal to develop a control signal for a computer system to be controlled;

wherein said audio conferencing system comprises a microphone and a speaker for audio communication between said network of workstations for each of said network of workstations, said audio application system being responsive to said control signal from said computer system to provide at least one audio sound having a volume and a directional characteristics which is based on said physical control members being selectively operated for reception by said field.

26. (Once amended) A system for controlling a computerized system as recited in claim [25] 24 wherein [said] a status of said physical control member is determined by a function of a position of said physical control member received by said field and of a time said member is one of received and removed by said field.

31. (Once amended) A system for controlling a computerized system as recited in claim 24, further comprising a plurality of control members for reception by said fields and wherein each of said fields comprises a plurality of positions at which a respective [ones] of said plurality of physical control members may be selectively manually placed and removed thereby to provide a plurality of selectable and changeable arrangements of said plurality of control members at said plurality of positions of each of said fields.

33. (Once amended) A system for controlling a computerized system as recited in claim 24 wherein said control member comprises identification circuitry and wherein each of said fields comprises internal circuitry adapted for connection with said identification circuitry of said control member, said internal circuitry of each of said fields being coupled to [said] a corresponding interface.

34. (Once amended) A system for controlling a computerized system as recited in claim 33 wherein each of said fields comprises a plurality of positions at which said physical control member may be selectively manually removably positioned in order to at least temporarily connect said identification circuitry of said control member with said internal circuitry of [said] a particular field of said plurality of fields.

35. (Once amended) A system for controlling a computerized system as recited in claim 34 wherein said particular field comprises at least one channel having a slanted surface for supporting said control physical control member and wherein [the] said computer system comprises a plurality of magnet elements for biasing said physical control member into a selected position.



METHODS AND SYSTEM FOR PROVIDING
COMPUTER/HUMAN INTERFACES

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Abstract of the Disclosure

The present invention teaches a variety of methods and systems for providing computer/human interfaces. According to one method, the user interfaces with an electronic device such as a computer system by engaging a sensor with desired regions of an encoded physical medium. the encoded physical medium is preferably chosen to provide intuitive meaning to the user and is thus an improved metaphor for interfacing with the computer system. The sensor may have at least one identification number (ID) providing information such as user identity, sensor type, access type, or language type.

15 The sensor can transmit the certain decoded information together with the at least one ID to the computer system.